

etchable and has a single-layer structure or a laminate structure of two or more insulation unit layers, and the patterning of the insulating layer by the wet etching is carried out using a dry film resist" (emphasis added). Takashi does not teach or suggest such a process.

The Office Action asserts that Takashi discloses a process for forming an electronic component comprising wet etching a laminate of a conductive inorganic material layer—insulating layer—conductive inorganic material layer or a conductive inorganic material layer—insulating layer to pattern the conductive inorganic material layer, and wet etching to pattern the insulating layer of the laminate using a dry film resist. Notwithstanding these assertions, Takashi does not teach or suggest the process of claim 57.

Claim 57 requires that wet etching of an insulating layer be conducted using a dry film resist. While Takashi discloses wet etching using a dry film resist, this disclosure is limited to the processing of a conductive substrate -- there is no disclosure in Takashi of wet etching an insulating layer using a dry film resist. In particular, Takashi discloses that the copper foil 12 is etched with a dry film resist 13. *See* Takashi, paragraph [0013]. There is no disclosure in Takashi that the insulating substrate 11 is wet etched with dry film resist. Accordingly, as Takashi does not teach or suggest a process including "... performing wet etching to pattern the insulating layer, wherein ... the patterning of the insulating layer by the wet etching is carried out using a dry film resist," Takashi does not teach each and every feature of claim 57.

Moreover, Takashi does not appreciate the unexpected, superior results discovered by the present inventors with respect to the practice of wet etching an insulating layer using a dry film resist. In particular, the present inventors have discovered that it is possible to improve the amount of time used and the quality of shapes obtained by wet etching by employing dry film resists. *See* instant specification, page 23, lines 12-25. Takashi does not teach or suggest wet etching an insulating layer using a dry film resist, or the benefits that stem therefrom.

Claim 57 is not anticipated by Takashi. Claims 58-78, 80 and 82 depend from claim 57 and, thus, also are not anticipated by Takashi. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

Rejection Under 35 U.S.C. §103

The Office Action rejects claims 79, 81 and 83-104 under 35 U.S.C. §103(a) over Takashi in view of U.S. Patent No. 6,596,184 to Shum et al. ("Shum"). Applicants respectfully traverse the rejection.

Claim 57 is set forth above. Claim 84 recites: "[a] process for producing an electronic component, comprising the steps of: laminating a laminate of conductive inorganic material layer – insulating layer – conductive inorganic material layer or a laminate of conductive inorganic material layer – insulating layer onto a dry film; and performing wet etching to produce an electronic component, wherein the insulating layer in the laminate can be patterned by wet etching, the insulating layer has a single or multilayer structure, the thickness of the dry film applied is not less than 1.1 times that of one conductive inorganic material layer in the laminate, and when the material to be etched is dipped in an etching liquid held at 70 °C, the holding time of the dry film resist pattern is not less than one min." Takashi and Shum do not teach or suggest such processes.

The Office Action relies on Takashi for the reasons discussed above. The Office Action asserts that Shum further discloses various specific conditions under which an electronic component is produced. Notwithstanding these assertions, Takashi and Shum do not teach or suggest the processes of claims 57 and 84.

For the reasons discussed in the previous section Takashi, does not teach or suggest the process of claim 57. Shum does not remedy the deficiencies of Takashi. Namely, Shum, like Takashi does not teach or suggest a process including wet etching an insulating layer using a dry film resist. As neither Takashi nor Shum teaches or suggests a process including

wet etching an insulating layer using a dry film resist, the combination of Takashi and Shum fails to teach or suggest the process of claim 57.

The Office Action concedes that Takashi does not disclose a process for producing an electronic component comprising performing wet etching a laminate, wherein a thickness of a dry resist film used in the etch is not less than 1.1 times that of one conductive inorganic material layer in the laminate. The Office Action further concedes that Takashi does not disclose a process in which, when a material to be etched is dipped in an etching liquid held at 70 °C, the holding time of the dry film resist pattern is not less than one minute. However, the Office Action asserts that it would have been obvious to optimize the resist film thicknesses, temperatures, etc. of the processes disclosed in Takashi. It is evident from the instant specification, however, that the particular parameters recited in claim 84 provide unexpected and superior performance. For example, as shown in Table D7 of the instant specification, using a dry film resist that is thinner or has the same thickness as a conductive inorganic layer of a laminate to be etched, will cause the conductive inorganic layer to break through the dry resist film. *See* instant specification, pages 111 to 112. Moreover, the particular temperature and time limitations recited in claim 84 prevent separation of the dry film resist during etching. *See* instant specification, page 137, lines 1 to 9 Takashi does not recognize the benefits.

Accordingly, Takashi does not teach or suggest the etching conditions of claim 84, and does not recognize the benefits achieved by selecting such conditions. Shum is similarly silent with respect to the conditions and benefits discussed above. Takashi and Shum, either alone or in combination, fail to teach or suggest each and every feature of claim 84.

Claims 57 and 84 would not have been rendered obvious by Takashi and Shum. Claims 79, 81, 83 and 85-104 depend variously from claims 57 and 84 and, thus, also would

not have been rendered obvious by the cited references. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

Double Patenting

The Office Action rejects claim 57 under 35 U.S.C. §101 as a substantial duplicate of claim 1 of U.S. Patent No. 6,709,988 to Sakayori et al. ("Sakayori"). Applicants respectfully traverse the rejection.

A statutory double patenting rejection is only proper if the relevant claims of the prior patent and the present application are directed to identical subject matter. *See* MPEP §804.II.A. In the present case, claim 1 of Sakayori recites, for example, that "wet etching is carried out in a continuous form in a continuous feed, continuous production line," and that "the dry film resist is laminated under a reduced pressure of not more than 80 Kpa." Neither of these features is required by claim 57 of the instant application. Accordingly, there are embodiments that fall within the scope of one claim, but not the other, so statutory double patenting does not exist.

Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-104 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

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